Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (currently amended) A method for isolation of biological macromolecules, said method comprising contacting a filtration apparatus with a biological sample comprising said biological macromolecules, said filtration apparatus comprising a first filter directly on top of a second filter such that said first filter is contacted with said biological macromolecules before said second filter, and said first filter having a pore size smaller than said second filter.

2. (previously presented) The method of claim 1, wherein said biological sample is a cellular lysate.

3. (previously presented) The method of claim 2, wherein said cellular lysate is derived from eukaryotic cells.

4. (previously presented) The method of claim 2, wherein said cellular lysate is derived from prokaryotic cells.

5. (previously presented) The method of claim 3, wherein said eukaryotic cells are selected from the group consisting of fungi, fish cells, yeast cells, plant cells and animal cells.

6. (previously presented) The method of claim 1, wherein said biological macromolecules are nucleic acid molecules.

7. (previously presented) The method of claim 1, wherein said biological macromolecules are protein molecules.

8. (previously presented) The method of claim 6, wherein said nucleic acid molecules are RNA molecules.

9. (previously presented) The method of claim 8, wherein said RNA molecules are mRNA molecules.

10. (previously presented) The method of claim 6, wherein said nucleic acid molecules are DNA molecules.

11. (previously presented) The method of claim 10, wherein said DNA molecules are vectors or plasmids.

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (cancelled)

16. (previously presented) The method of claim 1, wherein said pore size of said second filter is about 1 μm to 500 μm.

17. (previously presented) The method of claim 16, wherein said pore size of said second filter is about 10 μm to 70 μm.

18. (previously presented) The method of claim 17, wherein said pore size of said second filter is about 20 μm.

19. (cancelled)

20. (cancelled)

21. (previously presented) The method of claim 1, wherein said first filter comprises pores of sufficient size to retard the flow of cellular debris and particles.

22. (previously presented) The method of claim 21, wherein said pores of said first filter are about 0.1 μm to 1.0 μm in diameter.

23. (previously presented) The method of claim 21, wherein said pores of said first filter are about 0.2 μm in diameter.

24. (previously presented) The method of claim 1, wherein said second filter is comprised of glass fibers, silica, paper, cellulose, nitrocellulose, diatomaceous earth, and acetylated cellulose.

25. (previously presented) The method of claim 1, wherein said first filter is comprised of one or more materials selected from the group consisting of hydrophobic polysolfone, hydrophilic polyether sulfone, cellulose, acetylated cellulose, nitrocellulose, polyester, polyolefin, scintered polyethylene, porous ceramics, silica, polypropylene, paper, and polysaccharide.

26. (cancelled)

27. (previously presented) The method of claim 26, wherein said first filter has an average pore size of about 0.2 μm, and said second filter has an average pore size of about 20 μm.

28. (previously presented) The method of claim 1, wherein said first filter is provided in a form selected from the group consisting of wafer, cylindrical, rectangular, beads, gels, square, cartridge, swab tip, plug, frit, membrane, sheets or inserts.

29. (previously presented) The method of claim 1, wherein said filtration apparatus is provided in a form that is suitable to be inserted into a tube, microspin tube, microfuge tube, spin cartridge, vial, ampule, bag or suitable to fit multi-well plates typically used in processing of multiple samples, including, 6-well plates, 12-well plates,

24-well plates, 48-well plates, 96-well plates, 384-well plates, and the like, or suitable to fit into other plate sizes such as 35 mm plates, 60 mm plates, 100 mm plates, or 150 mm plates, and the like.

30. (previously presented) The method of claim 1, wherein the flow of the sample is facilitated by centrifugation, gravity, pressure, vacuum, or any combination thereof.

31. (currently amended) A method for isolation of biological macromolecules, said method comprising;

(a) contacting cells or cellular source containing the macromolecules of interest with a composition capable of lysing all or substantially all of said cells to give a lysate; and

(b) contacting the lysate with a filtration apparatus, wherein the apparatus comprises two filters, with a first filter directly on top of a second filter such that said first filter is contacted with said lysate before said second filter, and said first filter having a pore size smaller than said second filter; and

(c) promoting the flow through the filtration apparatus.

32. -54. (cancelled)

55. (currently amended) A process for isolating biological macromolecules comprising, separating a lysed natural source in a sample by filtration, wherein said sample is passed through a filtration apparatus comprising a first filter directly on top of

a second filter such that said first filter is contacted with said biological macromolecules before said second filter, and said first filter having a pore size smaller than said second filter.

56. (previously presented) The process according to claim 55, wherein the flow through the filtration apparatus is promoted by applying positive or negative pressure, or by gravity, or by gravity increased by centrifugation, or by a combination thereof.

57. (currently amended) The process according to claim 55, wherein said biological macromolecule is a ~~nucleic acid is~~ plasmid DNA or genomic DNA having a size of from 1 to 50 kb ~~(kilo base pairs)~~.

58. (cancelled)

59. (cancelled)

60. (cancelled)

61. (previously presented) The process according to claim 55, wherein said first filter has a pore size of 0.1 to 1.0 μm, and the second filter has a pore size of 1 to 500 μm.

62. (currently amended) The process according to claim 55, wherein said first filter comprises one or more materials selected from the group consisting of hydrophobic polysolfone, hydrophilic polyether sulfone, cellulose, acetylated cellulose, nitrocellulose, polyester, polyolefin, scintered polyethylene, porous ceramics, silica, polypropylene, paper, and polysaccharide.

63. (currently amended) The process according to claim 55, wherein ~~wherein several samples are processed simultaneously~~ said second filter ~~layer~~ is comprised of ~~polyethylene, polypropylene or a combination thereof~~ glass fibers, silica, paper, cellulose, nitrocellulose, diatomaceous earth, and acetylated cellulose.

64-65. (cancelled)

66. (previously presented) The method of any of claims 1, 31, or 55, wherein said second filter shears genomic DNA.